



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,586	09/30/2003	Zakir G. Magdum	EMC03-14(03084)	9950
22468	7590	09/11/2006	EXAMINER	
CHAPIN & HUANG L.L.C. WESTBOROUGH OFFICE PARK 1700 WEST PARK DRIVE WESTBOROUGH, MA 01581			WATT, CHRIS A	
			ART UNIT	PAPER NUMBER
			2193	

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s) SK	
	10/675,586		MAGDUM ET AL.	
	Examiner		Art Unit	
	Chris Watt		2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Grace et al. (U.S. Patent Application Publication Number 2004/0075680).

As to claim 1, Grace teaches a method of displaying management information associated with a storage area network (i.e. "the invention relates to graphical user interfaces for managing ... storage area networks (SANs) and the like" [0010], "such information can be displayed in diagram form or in table form [0012]), the method comprising receiving an identity of a selected managed entity existing in a storage area network (i.e. "determining ... the presence of a first device" [0013]), retrieving a first managed object (i.e. "queries the network to determine what devices are present in the network" [0011]) from a management database that corresponds to the selected managed entity (i.e. "the interconnections of such devices ... are stored" [0011]), identifying a sequence of relationships between the selected managed entity and other managed entities in the storage area network based on information in the first managed object and other corresponding managed objects in the management database (i.e. "to

Art Unit: 2193

determine what devices are present in the network and the interconnections of such devices" [0011], "determining ... the connection of a first set of devices to the first device" [0013]) and graphically displaying a first relationship view of the selected managed entity and at least one other managed entity of the storage area network (i.e. "displaying on a graphical user interface a primary device and a set of secondary devices coupled to the primary device" [0014], also note network layout in FIGS. 2-3) based on use of columns of icons (i.e. "rendering an expandable symbol", "first and second sets of devices in a first column" Claim 48, also note columns of icons in FIGS. 6-12 and column-like layout of FIGS. 2-3), a first column including at least one icon graphically representing a managed software entity, a second column including at least one icon graphically representing a managed storage entity (i.e. "a user can select the type of information, the order of the items and the level of detail that is desired", "may refer as examples, to any devices or software associated with a computer network" [0043]), at least a portion of the sequence of relationships being graphically represented by relationship paths between the at least one icon in the first column and the at least one icon in the second column (i.e. "the system includes a computer or user interface circuit ... wherein a first device and a first set of devices coupled to the first device are displayed" [0015], also note single and multiple paths between managed entities in FIGS. 2 and 3).

As to claim 15, Grace teaches a method for displaying management information associated with a storage area network (i.e. "the invention relates to graphical user interfaces for managing ... storage area networks (SANs) and the like" [0010], "such

Art Unit: 2193

information can be displayed in diagram form or in table form [0012]), the method comprising displaying multiple icons representing corresponding managed entities in the storage area network, the multiple icons including at least one software icon associated with a managed software entity and at least one hardware icon associated with a managed hardware entity (i.e. "a user can select the type of information, the order of the items and the level of detail that is desired", "may refer as examples, to any devices or software associated with a computer network" [0043]), displaying the at least one software icon in a first column, displaying the at least one hardware icon in a second column, the first column being disposed adjacent to the second column (i.e. "rendering an expandable symbol", "first and second sets of devices in a first column" Claim 48, also note columns of icons in FIGS. 6-12 and column-like layout of FIGS. 2-3), displaying associations among the managed entities via relationship paths between the icons of the first column and icons of the second column (i.e. "the system includes a computer or user interface circuit ... wherein a first device and a first set of devices coupled to the first device are displayed" [0015], also note single and multiple paths between managed entities in FIGS. 2 and 3).

As to claim 22, Grace teaches a computer system for supporting relationship views associated with a storage area network (i.e. "the invention relates to graphical user interfaces for managing ... storage area networks (SANs) and the like" [0010], "such information can be displayed in diagram form or in table form [0012]), the computer system comprising a processor, a memory unit that stores instructions associated with an application executed by the processor, a communication interface

Art Unit: 2193

that supports communication with other nodes of the storage area network and an interconnect coupling the processor, the memory unit, and the communication interface (i.e. "computing, data storage, and communications networks are just a few examples of networks for which new devices and methods of sharing data are continually developed and improved" [0004]), enabling the computer system to execute the application and perform operations of receiving an identity of a selected managed entity existing in a storage area network (i.e. "determining ... the presence of a first device" [0013]), retrieving a first managed object (i.e. "queries the network to determine what devices are present in the network" [0011]) from a management database that corresponds to the selected managed entity (i.e. "the interconnections of such devices ... are stored" [0011]), identifying a sequence of relationships between the selected managed entity and other managed entities in the storage area network based on information in the first managed object and other corresponding managed objects in the management database (i.e. "to determine what devices are present in the network and the interconnections of such devices" [0011], "determining ... the connection of a first set of devices to the first device" [0013]) and graphically displaying a first relationship view of the selected managed entity and at least one other managed entity of the storage area network (i.e. "displaying on a graphical user interface a primary device and a set of secondary devices coupled to the primary device" [0014], also note network layout in FIGS. 2-3) based on use of a first column including at least one icon graphically representing a managed software entity (i.e. "rendering an expandable symbol", "first and second sets of devices in a first column" Claim 48, also note columns of icons in

Art Unit: 2193

FIGS. 6-12 and column-like layout of FIGS. 2-3), a second column including at least one icon graphically representing a managed storage entity (i.e. "a user can select the type of information, the order of the items and the level of detail that is desired", "may refer as examples, to any devices or software associated with a computer network" [0043]), at least a portion of the sequence of relationships being graphically represented by relationship paths between the at least one icon in the first column and the at least one icon in the second column (i.e. "the system includes a computer or user interface circuit ... wherein a first device and a first set of devices coupled to the first device are displayed" [0015], also note single and multiple paths between managed entities in FIGS. 2 and 3).

As to claim 36, Grace teaches a computer system for displaying relationship views associated with a storage area network (i.e. "the invention relates to graphical user interfaces for managing ... storage area networks (SANs) and the like" [0010], "such information can be displayed in diagram form or in table form [0012]), the computer system comprising a processor, a memory unit that stores instructions associated with an application executed by the processor, a communication interface that supports communication with nodes of the storage area network, and an interconnect coupling the processor, the memory unit, and the communication interface (i.e. "computing, data storage, and communications networks are just a few examples of networks for which new devices and methods of sharing data are continually developed and improved" [0004]), enabling the computer system to execute the application and perform operations of displaying multiple icons representing corresponding managed

Art Unit: 2193

entities in the storage area network (i.e. "displaying on a graphical user interface a primary device and a set of secondary devices coupled to the primary device" [0014], also note network of corresponding devices in FIGS. 2-3), the multiple icons including at least one software icon associated with a managed software entity and at least one hardware icon associated with a managed hardware entity (i.e. "a user can select the type of information, the order of the items and the level of detail that is desired", "may refer as examples, to any devices or software associated with a computer network" [0043]), displaying the at least one software icon in a first column, displaying the at least one hardware icon in a second column, the first column being disposed adjacent to the second column (i.e. "rendering an expandable symbol", "first and second sets of devices in a first column" Claim 48, also note columns of icons in FIGS. 6-12 and column-like layout of FIGS. 2-3), displaying associations among the managed entities via relationship paths between the icons of the first column and icons of the second column (i.e. "the system includes a computer or user interface circuit ... wherein a first device and a first set of devices coupled to the first device are displayed" [0015], also note single and multiple paths between managed entities in FIGS. 2 and 3).

As to claim 43, Grace teaches a method of displaying management information associated with a storage area network (i.e. "the invention relates to graphical user interfaces for managing ... storage area networks (SANs) and the like" [0010], "such information can be displayed in diagram form or in table form [0012]), the method comprising receiving an identity of a selected managed entity (i.e. "determining ... the presence of a first device" [0013]) existing in a storage retrieving a first managed object

Art Unit: 2193

(i.e. "queries the network to determine what devices are present in the network" [0011]) from a management database that corresponds to the selected managed entity (i.e. "the interconnections of such devices ... are stored" [0011]), identifying a sequence of relationships between the selected managed entity and other managed entities in the storage area network based on information in the first managed object and other corresponding managed objects in the management database (i.e. "to determine what devices are present in the network and the interconnections of such devices" [0011], "determining ... the connection of a first set of devices to the first device" [0013]) and graphically displaying a first relationship view of the selected managed entity and at least one other managed entity of the storage area network (i.e. "displaying on a graphical user interface a primary device and a set of secondary devices coupled to the primary device" [0014], also note network layout in FIGS. 2-3) based on use of adjacent columns of icons (i.e. "rendering an expandable symbol", "first and second sets of devices in a first column" Claim 48, also note columns of icons in FIGS. 6-12 and column-like layout of FIGS. 2-3), a first column including at least one icon graphically representing a managed software entity, a second column including at least two icons graphically representing managed entities, a third column of at least two icons graphically representing managed storage entities (i.e. "a user can select the type of information, the order of the items and the level of detail that is desired", "may refer as examples, to any devices or software associated with a computer network" [0043], also note ability to select information displayed in FIGS. 4-5), the sequence of relationships being graphically represented by at least some diagonal relationship paths between the

at least one icon in the first column, the at least two icons in the second column, and the at least two icons in the third column (i.e. "the system includes a computer or user interface circuit ... wherein a first device and a first set of devices coupled to the first device are displayed" [0015], also note single and multiple paths between managed entities in FIGS. 2 and 3).

As to claim 45, Grace teaches a computer program product including a computer-readable medium having instructions stored thereon for processing data information (i.e. "computing, data storage, and communications networks are just a few examples of networks for which new devices and methods of sharing data are continually developed and improved" [0004]), such that the instructions, when carried out by a processing device, enable the processing device to perform the steps of receiving an identity of a selected managed entity existing in a storage area network (i.e. "determining ... the presence of a first device" [0013]), retrieving a first managed object (i.e. "queries the network to determine what devices are present in the network" [0011]) from a management database that corresponds to the selected managed entity (i.e. "the interconnections of such devices ... are stored" [0011]), identifying a sequence of relationships between the selected managed entity and other managed entities in the storage area network based on information in the first managed object and other corresponding managed objects in the management database (i.e. "to determine what devices are present in the network and the interconnections of such devices" [0011], "determining ... the connection of a first set of devices to the first device" [0013]), and graphically displaying a first relationship view of the selected managed entity and at

Art Unit: 2193

least one other managed entity of the storage area network (i.e. "displaying on a graphical user interface a primary device and a set of secondary devices coupled to the primary device" [0014], also note network layout in FIGS. 2-3) based on use of columns of icons (i.e. "rendering an expandable symbol", "first and second sets of devices in a first column" Claim 48, also note columns of icons in FIGS. 6-12 and column-like layout of FIGS. 2-3), a first column including at least one icon graphically representing a managed software entity, a second column including at least one icon graphically representing a managed storage entity (i.e. "a user can select the type of information, the order of the items and the level of detail that is desired", "may refer as examples, to any devices or software associated with a computer network" [0043]), at least a portion of the sequence of relationships being graphically represented by relationship paths between the at least one icon in the first column and the at least one icon in the second column (i.e. "the system includes a computer or user interface circuit ... wherein a first device and a first set of devices coupled to the first device are displayed" [0015], also note single and multiple paths between managed entities in FIGS. 2 and 3).

As to claim 46, Grace teaches a computer system for supporting relationship views associated with a storage area network (i.e. "the invention relates to graphical user interfaces for managing ... storage area networks (SANs) and the like" [0010], "such information can be displayed in diagram form or in table form [0012]), the computer system including means for receiving an identity of a selected managed entity existing in a storage area network (i.e. "determining ... the presence of a first device" [0013]), means for retrieving a first managed object (i.e. "queries the network to

Art Unit: 2193

determine what devices are present in the network" [0011]) from a management database that corresponds to the selected managed entity (i.e. "the interconnections of such devices ... are stored" [0011]), means for identifying a sequence of relationships between the selected managed entity and other managed entities in the storage area network based on information in the first managed object and other corresponding managed objects in the management database (i.e. "to determine what devices are present in the network and the interconnections of such devices" [0011], "determining ... the connection of a first set of devices to the first device" [0013]) and means for graphically displaying a first relationship view of the selected managed entity and at least one other managed entity of the storage area network (i.e. "displaying on a graphical user interface a primary device and a set of secondary devices coupled to the primary device" [0014], also note network layout in FIGS. 2-3) based on use of columns of icons (i.e. "rendering an expandable symbol", "first and second sets of devices in a first column" Claim 48, also note columns of icons in FIGS. 6-12 and column-like layout of FIGS. 2-3), a first column including at least one icon graphically representing a managed software entity, a second column including at least one icon graphically representing a managed storage entity (i.e. "a user can select the type of information, the order of the items and the level of detail that is desired", "may refer as examples, to any devices or software associated with a computer network" [0043]), at least a portion of the sequence of relationships being graphically represented by relationship paths between the at least one icon in the first column and the at least one icon in the second column (i.e. "the system includes a computer or user interface circuit ... wherein a first

device and a first set of devices coupled to the first device are displayed" [0015], also note single and multiple paths between managed entities in FIGS. 2 and 3).

As to claim 2, Grace teaches a method as in claim 1 further comprising extracting information from the first managed object associated with the selected managed entity, extracting information from other managed objects associated with other managed entities in the storage area network (i.e. "queries the network" [0011], "the invention provides a simplified means of managing large numbers of parameters associated with devices in such networks" [0010]), storing the information extracted from the first managed object and the other managed objects in corresponding data structures (i.e. "the interconnections of such devices ... are stored" [0011]) and based on processing of information in the data structures (i.e. "a user can select the type of information, the order of the items and the level of detail that is desired", "may refer as examples, to any devices or software associated with a computer network" [0043], also note ability to select information displayed in FIGS. 4-5), generating a horizontally disposed first relationship view of adjacently positioned columns including the first column of at least one icon, the second column of at least one icons (i.e. "rendering an expandable symbol", "first and second sets of devices in a first column" Claim 48, also note columns of icons in FIGS. 6-12 and column-like layout of FIGS. 2-3), and corresponding relationship paths from the perspective of an icon representing the selected managed entity (i.e. "the system includes a computer or user interface circuit ... wherein a first device and a first set of devices coupled to the first device are displayed" [0015], also note single and multiple paths between managed entities in FIGS. 2 and 3).

As to claim 23, Grace teaches a computer system as in claim 22 that additionally performs operations of extracting information from the first managed object associated with the selected managed entity, extracting information from other managed objects associated with other managed entities in the storage area network (i.e. "queries the network" [0011], "the invention provides a simplified means of managing large numbers of parameters associated with devices in such networks" [0010]), storing the information extracted from the first managed object and the other managed objects in corresponding data structures (i.e. "the interconnections of such devices ... are stored" [0011]) and based on processing of information in the data structures (i.e. "a user can select the type of information, the order of the items and the level of detail that is desired", "may refer as examples, to any devices or software associated with a computer network" [0043], also note ability to select information displayed in FIGS. 4-5), generating a horizontally disposed first relationship view of adjacently positioned columns including the first column of at least one icon, the second column of at least one icons (i.e. "rendering an expandable symbol", "first and second sets of devices in a first column" Claim 48, also note columns of icons in FIGS. 6-12 and column-like layout of FIGS. 2-3), and corresponding relationship paths from the perspective of an icon representing the selected managed entity (i.e. "the system includes a computer or user interface circuit ... wherein a first device and a first set of devices coupled to the first device are displayed" [0015], also note single and multiple paths between managed entities in FIGS. 2 and 3).

Art Unit: 2193

As to claim 3, Grace teaches a method as in claim 1 further comprising displaying the first column of at least one icon and the second column of at least one icon on a display screen for a manager of the storage area network (i.e. "rendering an expandable symbol", "first and second sets of devices in a first column" Claim 48, also note columns of icons in FIGS. 6-12 and column-like layout of FIGS. 2-3), providing a viewer controlled device supporting movement of a corresponding pointer on the display screen (i.e. "means by which an operator can change the status of the program, such as a keyboard or a mouse" [0035]), and highlighting a relationship path in a vicinity of the pointer on the display screen to emphasize a corresponding relationship between managed entities represented by icons in the first and second columns (i.e. "the SAN symbol is highlighted to indicate its selection, together with the Summary Option ... represents a comparison of the network" [0053]).

As to claim 24, Grace teaches a computer system as in claim 22 that additionally performs operations of displaying the first column of at least one icon and the second column of at least one icon on a display screen for a manager of the storage area network (i.e. "rendering an expandable symbol", "first and second sets of devices in a first column" Claim 48, also note columns of icons in FIGS. 6-12 and column-like layout of FIGS. 2-3), providing a viewer controlled device supporting movement of a corresponding pointer on the display screen (i.e. "means by which an operator can change the status of the program, such as a keyboard or a mouse" [0035]) and highlighting a relationship path in a vicinity of the pointer on the display screen to emphasize a corresponding relationship between managed entities represented by

Art Unit: 2193

icons in the first and second columns (i.e. "the SAN symbol is highlighted to indicate its selection, together with the Summary Option ... represents a comparison of the network" [0053]).

As to claim 4, Grace teaches a method as in claim 1 further comprising allocating a visual region in relation to a corresponding icon to receive input commands and in response to detecting receipt of a generated input command in the visual region by a user, expanding the first relationship view of managed entities in the storage area network into an expanded relationship view (i.e. "expandable symbols that can be navigated to explore the structure of a network" [0012]) including a third column of multiple icons disposed between the first column and the second column (i.e. "uses columns to the right of the parameter to report name value pairs corresponding to additional information relating to the parameter" [0050], , "a user can select ... the order of the items" [0043]), relationship paths being displayed between icons in the first column and the third column and between icons in the third column and the second column (i.e. "the system includes a computer or user interface circuit ... wherein a first device and a first set of devices coupled to the first device are displayed" [0015], also note single and multiple paths between managed entities in FIGS. 2 and 3), the icons in the third column representing other previously hidden managed entities associated with the storage area network (i.e. "uses columns to the right of the parameter to report name value pairs corresponding to additional information relating to the parameter" [0050], , "a user can select ... the order of the items" [0043]).

As to claim 25, Grace teaches a computer system as in claim 22 that additionally performs operations of allocating a visual region in relation to a corresponding icon to receive input commands, and in response to detecting receipt of a generated input command in the visual region by a user, expanding the first relationship view of managed entities in the storage area network into an expanded relationship view (i.e. "expandable symbols that can be navigated to explore the structure of a network" [0012]) including a third column of multiple icons disposed between the first column and the second column (i.e. "uses columns to the right of the parameter to report name value pairs corresponding to additional information relating to the parameter" [0050], , "a user can select ... the order of the items" [0043]), relationship paths being displayed between icons in the first column and the third column and between icons in the third column and the second column (i.e. "the system includes a computer or user interface circuit ... wherein a first device and a first set of devices coupled to the first device are displayed" [0015], also note single and multiple paths between managed entities in FIGS. 2 and 3), the icons in the third column representing other previously hidden managed entities associated with the storage area network (i.e. "uses columns to the right of the parameter to report name value pairs corresponding to additional information relating to the parameter" [0050], "a user can select ... the order of the items" [0043]).

As to claim 5, Grace teaches a method as in claim 1 further comprising utilizing references in the first managed object associated with the selected managed entity to identify the other managed entities related to the selected managed entity (i.e. "to determine what devices are present in the network and the interconnections of such

devices" [0011], "determining ... the connection of a first set of devices to the first device" [0013]).

As to claim 26, Grace teaches a computer system as in claim 22 that additionally performs operations of utilizing references in the first managed object associated with the selected managed entity to identify the other managed entities related to the selected managed entity (i.e. "to determine what devices are present in the network and the interconnections of such devices" [0011], "determining ... the connection of a first set of devices to the first device" [0013]).

As to claim 6, Grace teaches a method as in claim 1 further comprising displaying a first container encompassing at least one of the columns and corresponding icons (i.e. multiple interface window 606, see also [0048]) to represent at least one of the following: a database, a file system, a volume, a host server, a storage disk (i.e. hosts 124, 126 and 152, "It is understood that this is a very simplified view of a SAN 100 with representative storage devices and hosts coupled to the fabric 102. It is understood that quite often significantly more devices and switches are used to develop the full SAN 100" [0034]).

As to claim 27, Grace teaches a computer system as in claim 22 that additionally performs operations of displaying a first container encompassing at least one of the columns and corresponding icons (i.e. multiple interface window 606, see also [0048]) to represent at least one of the following: a database, a file system, a volume, a host server, a storage disk (i.e. hosts 124, 126 and 152, "It is understood that this is a very simplified view of a SAN 100 with representative storage devices and hosts coupled to

Art Unit: 2193

the fabric 102. It is understood that quite often significantly more devices and switches are used to develop the full SAN 100" [0034]).

As to claim 7, Grace teaches a method as in claim 1, wherein graphically displaying the first relationship view includes: displaying a first container encompassing at least one of the columns and corresponding icons and displaying a second container encompassing at least two of the columns and corresponding icons and the first container (i.e. multiple interface window 606, see also [0048]).

As to claim 28, Grace teaches a method as in claim 22, wherein graphically displaying the first relationship view includes: displaying a first container encompassing at least one of the columns and corresponding icons and displaying a second container encompassing at least two of the columns and corresponding icons and the first container (i.e. multiple interface window 606, see also [0048]).

As to claim 8, Grace teaches a method as in claim 1 further comprising from the first relationship view including at least the first column and second column displayed in a first area of a display screen (i.e. multiple interface window 606, see also [0048]), detecting a user selection of a particular icon in the first area, and in response to detecting the user selection of the particular icon in the first area, generating a second relationship view in a second area of the display screen, the second relationship view including a presentation of relationships between a managed entity associated with the particular icon and other associated nearest neighboring managed entities in the storage area network (i.e. "expandable symbols 804 representing network devices and details 806 of a user selected symbol 808", "the Detail Option 852 of the Details display

806 is selected such that various details are provided with respect to the selected symbol" [0056]).

As to claim 29, Grace teaches a computer system as in claim 22 that additionally performs operations of, from the first relationship view including at least the first column and second column displayed in a first area of a display screen (i.e. multiple interface window 606, see also [0048]), detecting a user selection of a particular icon in the first area; and in response to detecting the user selection of the particular icon in the first area, generating a second relationship view in a second area of the display screen, the second relationship view including a presentation of relationships between a managed entity associated with the particular icon and other associated nearest neighboring managed entities in the storage area network (i.e. "expandable symbols 804 representing network devices and details 806 of a user selected symbol 808", "the Detail Option 852 of the Details display 806 is selected such that various details are provided with respect to the selected symbol" [0056]).

As to claim 9, Grace teaches a method as in claim 8, wherein the second relationship view is generated in response to a viewer dragging and dropping the particular icon from the first area to the second area of the display screen (i.e. "means by which an operator can change the status of the program, such as a keyboard or a mouse" [0035]).

As to claim 30, Grace teaches a computer system as in claim 29, wherein the second relationship view is generated in response to a viewer dragging and dropping the particular icon from the first area to the second area of the display screen (i.e.

"means by which an operator can change the status of the program, such as a keyboard or a mouse" [0035]).

As to claim 10, Grace teaches a method as in claim 8 further comprising maintaining the display screen to include a third area to display a vertical hierarchy of managed entities associated with the storage area network (i.e. "includes an expandable tree diagram of expandable symbols that can be navigated to explore the structure of a network" [0012]), providing selectable input fields in relation to entries in the vertical hierarchy for selection of a managed entity in the storage area network and in response to detecting selection of a particular entry in the vertical hierarchy, generating the first relationship view from the perspective of a corresponding selected managed entity (i.e. "other portions of the user interface (e.g., windows) can include a summary of a symbol of the tree diagram that is selected by a user, and an event log displaying a running history of network connectivity and configuration changes that are detected [0012]).

As to claim 31, Grace teaches a computer system as in claim 29 that additionally performs operations of maintaining the display screen to include a third area to display a vertical hierarchy of managed entities associated with the storage area network (i.e. "includes an expandable tree diagram of expandable symbols that can be navigated to explore the structure of a network" [0012]), providing selectable input fields in relation to entries in the vertical hierarchy for selection of a managed entity in the storage area network, and in response to detecting selection of a particular entry in the vertical hierarchy, generating the first relationship view from the perspective of a corresponding

Art Unit: 2193

selected managed entity (i.e. "other portions of the user interface (e.g., windows) can include a summary of a symbol of the tree diagram that is selected by a user, and an event log displaying a running history of network connectivity and configuration changes that are detected [0012]).

As to claim 11, Grace teaches a method as in claim 1 further comprising maintaining a database of objects (i.e. "the interconnections of such devices ... are stored" [0011]) identifying relationships between the managed entities via collection of information from agents distributed throughout the storage area network (i.e. "to determine what devices are present in the network and the interconnections of such devices" [0011], "determining ... the connection of a first set of devices to the first device" [0013]).

As to claim 32, Grace teaches a computer system as in claim 22 that additionally performs operations of maintaining a database of objects (i.e. "the interconnections of such devices ... are stored" [0011]) identifying relationships between the managed entities via collection of information from agents distributed throughout the storage area network (i.e. "to determine what devices are present in the network and the interconnections of such devices" [0011], "determining ... the connection of a first set of devices to the first device" [0013]).

As to claim 12, Grace teaches a method as in claim 1 further comprising maintaining a display screen to include an area to display a vertical hierarchy of managed entities associated with the storage area network (i.e. "includes an expandable tree diagram of expandable symbols that can be navigated to explore the

Art Unit: 2193

structure of a network" [0012]), providing selectable input fields in relation to entries in the vertical hierarchy for selection of a managed entity in the storage area network, and in response to detecting selection of a particular entry in the vertical hierarchy, generating the first relationship view from the perspective of a corresponding selected managed entity (i.e. "other portions of the user interface (e.g., windows) can include a summary of a symbol of the tree diagram that is selected by a user, and an event log displaying a running history of network connectivity and configuration changes that are detected [0012]).

As to claim 33, Grace teaches a computer system as in claim 22 that additionally performs operations of maintaining a display screen to include an area to display a vertical hierarchy of managed entities associated with the storage area network (i.e. "includes an expandable tree diagram of expandable symbols that can be navigated to explore the structure of a network" [0012]), providing selectable input fields in relation to entries in the vertical hierarchy for selection of a managed entity in the storage area network, and in response to detecting selection of a particular entry in the vertical hierarchy, generating the first relationship view from the perspective of a corresponding selected managed entity (i.e. "other portions of the user interface (e.g., windows) can include a summary of a symbol of the tree diagram that is selected by a user, and an event log displaying a running history of network connectivity and configuration changes that are detected [0012]).

As to claim 13, Grace teaches a method as in claim 1, wherein the first relationship view identifies a mapping between a file system of a host server and a

corresponding storage disk of the storage area network (i.e. hosts 124, 126 and 152, "It is understood that this is a very simplified view of a SAN 100 with representative storage devices and hosts coupled to the fabric 102. It is understood that quite often significantly more devices and switches are used to develop the full SAN 100" [0034]).

As to claim 34, Grace teaches a computer system as in claim 22, wherein the first relationship view identifies a mapping between a file system of a host server and a corresponding storage disk of the storage area network (i.e. hosts 124, 126 and 152, "It is understood that this is a very simplified view of a SAN 100 with representative storage devices and hosts coupled to the fabric 102. It is understood that quite often significantly more devices and switches are used to develop the full SAN 100" [0034]).

As to claim 14, Grace teaches a method as in claim 1, wherein the first relationship view includes different types of icons (i.e. "expandable symbols that can be navigated to explore the structure of a network" [0012]), each type of the different type of icons being represented by a corresponding symbol that identifies a type of managed entity associated with the storage area network (i.e. "symbols representing elements of the network are displayed on the graphical user interface" [0011]).

As to claim 35, Grace teaches a computer system as in claim 22, wherein the first relationship view includes different types of icons (i.e. "expandable symbols that can be navigated to explore the structure of a network" [0012]), each type of the different type of icons being represented by a corresponding symbol that identifies a type of managed entity associated with the storage area network (i.e. "symbols

representing elements of the network are displayed on the graphical user interface" [0011]).

As to claim 16, Grace teaches a method as in claim 15 further comprising, in relation to a first icon of the multiple icons, maintaining a visual region associated with the first icon to receive input commands from a user indicating to expand and display hidden attributes associated with a corresponding managed entity associated with the first icon (i.e. "expandable symbols that can be navigated to explore the structure of a network" [0012]).

As to claim 37, Grace teaches a computer system as in claim 36 that additionally performs operations of, in relation to a first icon of the multiple icons, maintaining a visual region associated with the first icon to receive input commands from a user indicating to expand and display hidden attributes associated-with a corresponding managed entity associated with the first icon (i.e. "expandable symbols that can be navigated to explore the structure of a network" [0012]).

As to claim 17, Grace teaches a method as in claim 16 further comprising, in response to detecting an input command signal received in the visual region, displaying an expanded relationship view of managed entities associated with the first icon (i.e. "expandable symbols that can be navigated to explore the structure of a network" [0012]), the expanded relationship view including: i) additional icons associated with other managed entities in the storage area network, and ii) additional relationship paths between the additional icons and other previously displayed icons (i.e. "other portions of the user interface (e.g., windows) can include a summary of a symbol of the tree

diagram that is selected by a user, and an event log displaying a running history of network connectivity and configuration changes that are detected [0012]).

As to claim 38, Grace teaches a computer system as in claim 37 that additionally performs operations of in response to detecting an input command signal received in the visual region, displaying an expanded relationship view of managed entities associated with the first icon (i.e. "expandable symbols that can be navigated to explore the structure of a network" [0012]), the expanded relationship view including: i) additional icons associated with other managed entities in the storage area network, and ii) additional relationship paths between the additional icons and other previously displayed icons (i.e. "other portions of the user interface (e.g., windows) can include a summary of a symbol of the tree diagram that is selected by a user, and an event log displaying a running history of network connectivity and configuration changes that are detected [0012]).

As to claim 18, Grace teaches a method as in claim 17 further comprising displaying a graphical container encompassing the first icon (i.e. multiple interface windows 606, see also [0048]) and the expanded relationship view of the managed entity associated with the first icon (i.e. "expandable symbols that can be navigated to explore the structure of a network" [0012]) to indicate that the additional icons and corresponding managed entities are related to the first icon and corresponding managed entity (i.e. "other portions of the user interface (e.g., windows) can include a summary of a symbol of the tree diagram that is selected by a user, and an event log

displaying a running history of network connectivity and configuration changes that are detected [0012]).

As to claim 39, Grace teaches a computer system as in claim 38 that additionally performs operations of displaying a graphical container encompassing the first icon (i.e. multiple interface windows 606, see also [0048]) and the expanded relationship view of the managed entity associated with the first icon (i.e. "expandable symbols that can be navigated to explore the structure of a network" [0012]) to indicate that the additional icons and corresponding managed entities are related to the first icon and corresponding managed entity (i.e. "other portions of the user interface (e.g., windows) can include a summary of a symbol of the tree diagram that is selected by a user, and an event log displaying a running history of network connectivity and configuration changes that are detected [0012]).

As to claim 19, Grace teaches a method as in claim 15 further comprising displaying nested graphical containers encompassing different sets of icons to delineate corresponding functional components (i.e. multiple interface windows 606, see also [0048]) associated with a host server of the storage area network (i.e. hosts 124, 126 and 152, "It is understood that this is a very simplified view of a SAN 100 with representative storage devices and hosts coupled to the fabric 102. It is understood that quite often significantly more devices and switches are used to develop the full SAN 100" [0034]).

As to claim 40, Grace teaches a computer system as in claim 36 that additionally performs operations of, displaying nested graphical containers encompassing different

Art Unit: 2193

sets of icons to delineate corresponding functional components (i.e. multiple interface windows 606, see also [0048]) associated with a host server of the storage area network (i.e. hosts 124, 126 and 152, "It is understood that this is a very simplified view of a SAN 100 with representative storage devices and hosts coupled to the fabric 102. It is understood that quite often significantly more devices and switches are used to develop the full SAN 100" [0034]).

As to claim 20, Grace teaches a method as in claim 15 further comprising displaying a first graphical container encompassing icons representing managed entities associated with a host server of the storage area network, displaying a second graphical container encompassing icons representing managed entities associated with a storage device of the storage area network (i.e. multiple interface windows 606, see also [0048]) and displaying relationship paths between icons in the first graphical container and icons in the second graphical container to indicate a device mapping between the host server and the storage device (i.e. hosts 124, 126 and 152, "It is understood that this is a very simplified view of a SAN 100 with representative storage devices and hosts coupled to the fabric 102. It is understood that quite often significantly more devices and switches are used to develop the full SAN 100" [0034]).

As to claim 41, Grace teaches a computer system as in claim 36 that additionally performs operations of displaying a first graphical container encompassing icons representing managed entities associated with a host server of the storage area network, displaying a second graphical container encompassing icons representing managed entities associated with a storage device of the storage area network (i.e.

Art Unit: 2193

multiple interface windows 606, see also [0048]), and displaying relationship paths between icons in the first graphical container and icons in the second graphical container to indicate a device mapping between the host server and the storage device (i.e. hosts 124, 126 and 152, "It is understood that this is a very simplified view of a SAN 100 with representative storage devices and hosts coupled to the fabric 102. It is understood that quite often significantly more devices and switches are used to develop the full SAN 100" [0034]).

As to claim 21, Grace teaches a method as in claim 15, wherein a first icon of the multiple icons identifies a file system and a second icon of the multiple icons identifies at least part of a storage device, and relationship paths between the first icon and second icon identify a mapping between the file system and storage device (i.e. hosts 124, 126 and 152, "It is understood that this is a very simplified view of a SAN 100 with representative storage devices and hosts coupled to the fabric 102. It is understood that quite often significantly more devices and switches are used to develop the full SAN 100" [0034]).

As to claim 42, Grace teaches a computer system as in claim 36, wherein a first icon of the multiple icons identifies a file system and a second icon of the multiple icons identifies at least part of a storage device, and relationship paths between the first icon and second icon identify a mapping between the file system and storage device (i.e. hosts 124, 126 and 152, "It is understood that this is a very simplified view of a SAN 100 with representative storage devices and hosts coupled to the fabric 102. It is understood

Art Unit: 2193

that quite often significantly more devices and switches are used to develop the full SAN 100" [0034]).

As to claim 44, Grace teaches a method as in claim 43 further comprising graphically displaying a first container encompassing the first column to identify a host server of the storage area network (i.e. hosts 124, 126 and 152, "It is understood that this is a very simplified view of a SAN 100 with representative storage devices and hosts coupled to the fabric 102. It is understood that quite often significantly more devices and switches are used to develop the full SAN 100" [0034]) and graphically displaying a second container encompassing at least the third column to identify a storage device (i.e. "uses columns to the right of the parameter to report name value pairs corresponding to additional information relating to the parameter" [0050], , "a user can select ... the order of the items" [0043]).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kekic et al. teach a detailed network management system which includes a hierarchical view and various relationship views.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris Watt whose telephone number is (703) 270-1046. The examiner can normally be reached on Monday-Thursday 6:30-4:00 Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (703) 270-0000. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Art Unit: 2193

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chris Watt/

August 25, 2006

CAW


CHANH D. NGUYEN
SUPERVISORY PATENT EXAMINER